



Sequence Listing to File.TXT
SEQUENCE LISTING

<110> YOSHINAGA, Takashi
ARAI, Toru

<120> hERG channel-expressing cell

<130> 09857/0204372-USO

<140> 10/595,858

<141> 2006-05-16

<150> PCT/JP2004/017441

<151> 2004-11-17

<150> JP 2003-387255

<151> 2003-11-17

<160> 13

<170> PatentIn version 3.3

<210> 1

<211> 4070

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

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ccggccaccc gaagcctagt gcgtcgccgg gtgggtgggc ccgcccggcg ccatgggctc 180

agg atg ccg gtg cgg agg ggc cac gtc gcg ccg cag aac acc ttc ctg 228
Met Pro Val Arg Arg Gly His Val Ala Pro Gln Asn Thr Phe Leu
1 5 10 15

gac acc atc atc cgc aag ttt gag ggc cag agc cgt aag ttc atc atc 276
Asp Thr Ile Ile Arg Lys Phe Glu Gly Gln Ser Arg Lys Phe Ile Ile
20 25 30

gcc aac gct cgg gtg gag aac tgc gcc gtc atc tac tgc aac gac ggc 324
Ala Asn Ala Arg Val Glu Asn Cys Ala Val Ile Tyr Cys Asn Asp Gly
35 40 45

ttc tgc gag ctg tgc ggc tac tcg cgg gcc gag gtg atg cag cga ccc 372
Phe Cys Glu Leu Cys Gly Tyr Ser Arg Ala Glu Val Met Gln Arg Pro
50 55 60

tgc acc tgc gac ttc ctg cac ggg ccg cgc acg cag cgc cgc gct gcc 420
Cys Thr Cys Asp Phe Leu His Gly Pro Arg Thr Gln Arg Arg Ala Ala
65 70 75

gcg cag atc gcg cag gca ctg ctg ggc gcc gag gag cgc aaa gtg gaa 468
Ala Gln Ile Ala Gln Ala Leu Leu Gly Ala Glu Glu Arg Lys Val Glu
80 85 90 95

Sequence Listing to File.TXT

atc gcc ttc tac cgg aaa gat ggg agc tgc ttc cta tgt ctg gtg gat Ile Ala Phe Tyr Arg Lys Asp Gly Ser Cys Phe Leu Cys Leu Val Asp 100 105 110	516
gtg gtg ccc gtg aag aac gag gat ggg gct gtc atc atg ttc atc ctc Val Val Pro Val Lys Asn Glu Asp Gly Ala Val Ile Met Phe Ile Leu 115 120 125	564
aat ttc gag gtg gtg atg gag aag gac atg gtg ggg tcc ccg gct cat Asn Phe Glu Val Val Met Glu Lys Asp Met Val Gly Ser Pro Ala His 130 135 140	612
gac acc aac cac cgg ggc ccc ccc acc agc tgg ctg gcc cca ggc cgc Asp Thr Asn His Arg Gly Pro Pro Thr Ser Trp Leu Ala Pro Gly Arg 145 150 155	660
gcc aag acc ttc cgc ctg aag ctg ccc gcg ctg ctg gcg ctg acg gcc Ala Lys Thr Phe Arg Leu Lys Leu Pro Ala Leu Leu Ala Leu Thr Ala 160 165 170 175	708
cgg gag tcg tcg gtg cgg tcg ggc ggc gcg ggc ggc gcg ggc gcc ccg Arg Glu Ser Ser Val Arg Ser Gly Gly Ala Gly Gly Ala Gly Ala Pro 180 185 190	756
ggg gcc gtg gtg gtg gac gtg gac ctg acg ccc gcg gca ccc agc agc Gly Ala Val Val Val Asp Val Asp Leu Thr Pro Ala Ala Pro Ser Ser 195 200 205	804
gag tcg ctg gcc ctg gac gaa gtg aca gcc atg gac aac cac gtg gca Glu Ser Leu Ala Leu Asp Glu Val Thr Ala Met Asp Asn His Val Ala 210 215 220	852
ggg ctc ggg ccc gcg gag gag cgg cgt gcg ctg gtg ggt ccc ggc tct Gly Leu Gly Pro Ala Glu Glu Arg Arg Ala Leu Val Gly Pro Gly Ser 225 230 235	900
ccg ccc cgc agc gcg ccc ggc cag ctc cca tcg ccc cgg gcg cac agc Pro Pro Arg Ser Ala Pro Gly Gln Leu Pro Ser Pro Arg Ala His Ser 240 245 250 255	948
ctc aac ccc gac gcc tcg ggc tcc agc tgc agc ctg gcc cgg acg cgc Leu Asn Pro Asp Ala Ser Gly Ser Ser Cys Ser Leu Ala Arg Thr Arg 260 265 270	996
tcc cga gaa agc tgc gcc agc gtg cgc cgc gcc tcg tcg gcc gac gac Ser Arg Glu Ser Cys Ala Ser Val Arg Arg Ala Ser Ser Ala Asp Asp 275 280 285	1044
atc gag gcc atg cgc gcc ggg gtg ctg ccc ccg cca ccg cgc cac gcc Ile Glu Ala Met Arg Ala Gly Val Leu Pro Pro Pro Pro Arg His Ala 290 295 300	1092
agc acc ggg gcc atg cac cca ctg cgc agc ggc ttg ctc aac tcc acc Ser Thr Gly Ala Met His Pro Leu Arg Ser Gly Leu Leu Asn Ser Thr 305 310 315	1140
tcg gac tcc gac ctc gtg cgc tac cgc acc att agc aag att ccc caa Ser Asp Ser Asp Leu Val Arg Tyr Arg Thr Ile Ser Lys Ile Pro Gln 320 325 330 335	1188
atc acc ctc aac ttt gtg gac ctc aag ggc gac ccc ttc ttg gct tcg Ile Thr Leu Asn Phe Val Asp Leu Lys Gly Asp Pro Phe Leu Ala Ser 340 345 350	1236

Sequence Listing to File.TXT

ccc acc agt gac cgt gag atc ata gca cct aag ata aag gag cga acc Pro Thr Ser Asp Arg Glu Ile Ile Ala Pro Lys Ile Lys Glu Arg Thr 355 360 365	1284
cac aat gtc act gag aag gtc acc cag gtc ctg tcc ctg ggc gcc gac His Asn Val Thr Glu Lys Val Thr Gln Val Leu Ser Leu Gly Ala Asp 370 375 380	1332
gtg ctg cct gag tac aag ctg cag gca ccg cgc atc cac cgc tgg acc Val Leu Pro Glu Tyr Lys Leu Gln Ala Pro Arg Ile His Arg Trp Thr 385 390 395	1380
atc ctg cat tac agc ccc ttc aag gcc gtg tgg gac tgg ctc atc ctg Ile Leu His Tyr Ser Pro Phe Lys Ala Val Trp Asp Trp Leu Ile Leu 400 405 410 415	1428
ctg ctg gtc atc tac acg gct gtc ttc aca ccc tac tcg gct gcc ttc Leu Leu Val Ile Tyr Thr Ala Val Phe Thr Pro Tyr Ser Ala Ala Phe 420 425 430	1476
ctg ctg aag gag acg gaa gaa ggc ccg cct gct acc gag tgt ggc tac Leu Leu Lys Glu Thr Glu Glu Gly Pro Pro Ala Thr Glu Cys Gly Tyr 435 440 445	1524
gcc tgc cag ccg ctg gct gtg gtg gac ctc atc gtg gac atc atg ttc Ala Cys Gln Pro Leu Ala Val Val Asp Leu Ile Val Asp Ile Met Phe 450 455 460	1572
att gtg gac atc ctc atc aac ttc cgc acc acc tac gtc aat gcc aac Ile Val Asp Ile Leu Ile Asn Phe Arg Thr Thr Tyr Val Asn Ala Asn 465 470 475	1620
gag gag gtg gtc agc cac ccc ggc cgc atc gcc gtc cac tac ttc aag Glu Glu Val Val Ser His Pro Gly Arg Ile Ala Val His Tyr Phe Lys 480 485 490 495	1668
ggc tgg ttc ctc atc gac atg gtg gcc gcc atc ccc ttc gac ctg ctc Gly Trp Phe Leu Ile Asp Met Val Ala Ala Ile Pro Phe Asp Leu Leu 500 505 510	1716
atc ttc ggc tct ggc tct gag gag ctg atc ggg ctg ctg aag act gcg Ile Phe Gly Ser Gly Ser Glu Glu Leu Ile Gly Leu Leu Lys Thr Ala 515 520 525	1764
cgg ctg ctg cgg ctg gtg cgc gtg gcg cgg aag ctg gat cgc tac tca Arg Leu Leu Arg Leu Val Arg Val Ala Arg Lys Leu Asp Arg Tyr Ser 530 535 540	1812
gag tac ggc gcg gcc gtg ctg ttc ttg ctc atg tgc acc ttt gcg ctc Glu Tyr Gly Ala Ala Val Leu Phe Leu Leu Met Cys Thr Phe Ala Leu 545 550 555	1860
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cag cca cac atg gac tca cgc atc ggc tgg ctg cac aac ctg ggc gac Gln Pro His Met Asp Ser Arg Ile Gly Trp Leu His Asn Leu Gly Asp 580 585 590	1956
cag ata ggc aaa ccc tac aac agc agc ggc ctg ggc ggc ccc tcc atc Gln Ile Gly Lys Pro Tyr Asn Ser Ser Gly Leu Gly Gly Pro Ser Ile 2004	

Sequence Listing to File.TXT

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Lys	Asp	Lys	Tyr	Val	Thr	Ala	Leu	Tyr	Phe	Thr	Phe	Ser	Ser	Leu	Thr			
610																615	620	
agt	gtg	ggc	ttc	ggc	aac	gtc	tct	ccc	aac	acc	aac	tca	gag	aag	atc	2100		
Ser	Val	Gly	Phe	Gly	Asn	Val	Ser	Pro	Asn	Thr	Asn	Ser	Glu	Lys	Ile			
625																630	635	
ttc	tcc	atc	tgc	gtc	atg	ctc	att	ggc	tcc	ctc	atg	tat	gct	agc	atc	2148		
Phe	Ser	Ile	Cys	Val	Met	Leu	Ile	Gly	Ser	Leu	Met	Tyr	Ala	Ser	Ile			
640																645	650	
ttc	ggc	aac	gtg	tcg	gcc	atc	atc	cag	cgg	ctg	tac	tcg	ggc	aca	gcc	2196		
Phe	Gly	Asn	Val	Ser	Ala	Ile	Ile	Gln	Arg	Leu	Tyr	Ser	Gly	Thr	Ala			
660																665	670	
cgc	tac	cac	aca	cag	atg	ctg	cgg	gtg	cgg	gag	ttc	atc	cgc	ttc	cac	2244		
Arg	Tyr	His	Thr	Gln	Met	Leu	Arg	Val	Arg	Glu	Phe	Ile	Arg	Phe	His			
675																680	685	
cag	atc	ccc	aat	ccc	ctg	cgc	cag	cgc	ctc	gag	gag	tac	ttc	cag	cac	2292		
Gln	Ile	Pro	Asn	Pro	Leu	Arg	Gln	Arg	Leu	Glu	Glu	Tyr	Phe	Gln	His			
690																695	700	
gcc	tgg	tcc	tac	acc	aac	ggc	atc	gac	atg	aac	gcg	gtg	ctg	aag	ggc	2340		
Ala	Trp	Ser	Tyr	Thr	Asn	Gly	Ile	Asp	Met	Asn	Ala	Val	Leu	Lys	Gly			
705																710	715	
ttc	cct	gag	tgc	ctg	cag	gct	gac	atc	tgc	ctg	cac	ctg	aac	cgc	tca	2388		
Phe	Pro	Glu	Cys	Leu	Gln	Ala	Asp	Ile	Cys	Leu	His	Leu	Asn	Arg	Ser			
720																725	730	
ctg	ctg	cag	cac	tgc	aaa	ccc	ttc	cga	ggg	gcc	acc	aag	ggc	tgc	ctt	2436		
Leu	Leu	Gln	His	Cys	Lys	Pro	Phe	Arg	Gly	Ala	Thr	Lys	Gly	Cys	Leu			
740																745	750	
cgg	gcc	ctg	gcc	atg	aag	ttc	aag	acc	aca	cat	gca	ccg	cca	ggg	gac	2484		
Arg	Ala	Leu	Ala	Met	Lys	Phe	Lys	Thr	Thr	His	Ala	Pro	Pro	Gly	Asp			
755																760	765	
aca	ctg	gtg	cat	gct	ggg	gac	ctg	ctc	acc	gcc	ctg	tac	ttc	atc	tcc	2532		
Thr	Leu	Val	His	Ala	Gly	Asp	Leu	Leu	Thr	Ala	Leu	Tyr	Phe	Ile	Ser			
770																775	780	
cgg	ggc	tcc	atc	gag	atc	ctg	cgg	ggc	gac	gtc	gtc	gtg	gcc	atc	ctg	2580		
Arg	Gly	Ser	Ile	Glu	Ile	Leu	Arg	Gly	Asp	Val	Val	Val	Ala	Ile	Leu			
785																790	795	
ggg	aag	aat	gac	atc	ttt	ggg	gag	cct	ctg	aac	ctg	tat	gca	agg	cct	2628		
Gly	Lys	Asn	Asp	Ile	Phe	Gly	Glu	Pro	Leu	Asn	Leu	Tyr	Ala	Arg	Pro			
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ggc	aag	tcg	aac	ggg	gat	gtg	cgg	gcc	ctc	acc	tac	tgt	gac	cta	cac	2676		
Gly	Lys	Ser	Asn	Gly	Asp	Val	Arg	Ala	Leu	Thr	Tyr	Cys	Asp	Leu	His			
820																825	830	
aag	atc	cat	cgg	gac	gac	ctg	ctg	gag	gtg	ctg	gac	atg	tac	cct	gag	2724		
Lys	Ile	His	Arg	Asp	Asp	Leu	Leu	Glu	Val	Leu	Asp	Met	Tyr	Pro	Glu			
835																840	845	
ttc	tcc	gac	cac	ttc	tgg	tcc	agc	ctg	gag	atc	acc	ttc	aac	ctg	cga	2772		

Sequence Listing to File.TXT

Phe Ser Asp His Phe Trp Ser	Ser Leu Glu Ile Thr Phe Asn Leu Arg	
850	855 860	
gat acc aac atg atc ccg ggc tcc ccc ggc agt acg gag tta gag ggt		2820
Asp Thr Asn Met Ile Pro Gly Ser Pro Gly Ser Thr Glu Leu Glu Gly		
865	870 875	
ggc ttc agt cgg caa cgc aag cgc aag ttg tcc ttc cgc agg cgc acg		2868
Gly Phe Ser Arg Gln Arg Lys Arg Lys Leu Ser Phe Arg Arg Arg Thr		
880	885 890 895	
gac aag gac acg gag cag cca ggg gag gtg tcc gcc ttg ggg ccg ggc		2916
Asp Lys Asp Thr Glu Gln Pro Gly Glu Val Ser Ala Leu Gly Pro Gly		
900	905 910	
cgg gcg ggg gca ggg ccg agt agc cgg ggc cgg ccg ggg ggg ccg tgg		2964
Arg Ala Gly Ala Gly Pro Ser Ser Arg Gly Arg Pro Gly Gly Pro Trp		
915	920 925	
ggg gag agc ccg tcc agt ggc ccc tcc agc cct gag agc agt gag gat		3012
Gly Glu Ser Pro Ser Ser Gly Pro Ser Ser Pro Glu Ser Ser Glu Asp		
930	935 940	
gag ggc cca ggc cgc agc tcc agc ccc ctc cgc ctg gtg ccc ttc tcc		3060
Glu Gly Pro Gly Arg Ser Ser Ser Pro Leu Arg Leu Val Pro Phe Ser		
945	950 955	
agc ccc agg ccc ccc gga gag ccg ccg ggt ggg gag ccc ctg atg gag		3108
Ser Pro Arg Pro Pro Gly Glu Pro Pro Gly Glu Glu Pro Leu Met Glu		
960	965 970 975	
gac tgc gag aag agc agc gac act tgc aac ccc ctg tca ggc gcc ttc		3156
Asp Cys Glu Lys Ser Ser Asp Thr Cys Asn Pro Leu Ser Gly Ala Phe		
980	985 990	
tca gga gtg tcc aac att ttc agc ttc tgg ggg gac agt cgg ggc cgc		3204
Ser Gly Val Ser Asn Ile Phe Ser Phe Trp Gly Asp Ser Arg Gly Arg		
995	1000 1005	
cag tac cag gag ctc cct cga tgc ccc gcc ccc acc ccc agc ctc		3249
Gln Tyr Gln Glu Leu Pro Arg Cys Pro Ala Pro Thr Pro Ser Leu		
1010	1015 1020	
ctc aac atc ccc ctc tcc agc ccg ggt cgg cgg ccc cgg ggc gac		3294
Leu Asn Ile Pro Leu Ser Ser Pro Gly Arg Arg Pro Arg Gly Asp		
1025	1030 1035	
gtg gag agc agg ctg gat gcc ctc cag cgc cag ctc aac agg ctg		3339
Val Glu Ser Arg Leu Asp Ala Leu Gln Arg Gln Leu Asn Arg Leu		
1040	1045 1050	
gag acc cgg ctg agt gca gac atg gcc act gtc ctg cag ctg cta		3384
Glu Thr Arg Leu Ser Ala Asp Met Ala Thr Val Leu Gln Leu Leu		
1055	1060 1065	
cag agg cag atg acg ctg gtc ccg ccc gcc tac agt gct gtg acc		3429
Gln Arg Gln Met Thr Leu Val Pro Pro Ala Tyr Ser Ala Val Thr		
1070	1075 1080	
acc ccg ggg cct ggc ccc act tcc aca tcc ccg ctg ttg ccc gtc		3474
Thr Pro Gly Pro Gly Pro Thr Ser Thr Ser Pro Leu Leu Pro Val		
1085	1090 1095	

Sequence Listing to File.TXT

agc ccc ctc ccc acc ctc acc ttg gac tcg ctt tct cag gtt tcc 3519
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1100 1105 1110

cag ttc atg gcg tgt gag gag ctg ccc ccg ggg gcc cca gag ctt 3564
Gln Phe Met Ala Cys Glu Glu Leu Pro Pro Gly Ala Pro Glu Leu
1115 1120 1125

ccc caa gaa ggc ccc aca cga cgc ctc tcc cta ccg ggc cag ctg 3609
Pro Gln Glu Gly Pro Thr Arg Arg Leu Ser Leu Pro Gly Gln Leu
1130 1135 1140

ggg gcc ctc acc tcc cag ccc ctg cac aga cac ggc tcg gac ccg 3654
Gly Ala Leu Thr Ser Gln Pro Leu His Arg His Gly Ser Asp Pro
1145 1150 1155

ggc agt tagtggggct gcccagtgtg gacacgtggc tcaccaggg atcaaggcgc 3710
Gly Ser

tgctgggccg ctccccttgg aggccctgct caggaggccc tgaccgtgga aggggagagg 3770

aactcgaaag cacagctcct cccccagccc ttgggaccat cttctcctgc agtcccctgg 3830

gccccagtga gaggggcagg ggcagggccg gcagtaggtg gggcctgtgg tccccccact 3890

gccctgaggg cattagctgg tctaactgcc cggaggcacc cggccctggg ccttaggcac 3950

ctcaaggact tttctgctat ttactgctct tattgttaag gataataatt aaggatcata 4010

tgaataatta atgaagatgc tgatgactat gaataataaa taattatcct gaggagaaaa 4070

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<213> Homo Sapiens

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1 5 10 15

Thr Ile Ile Arg Lys Phe Glu Gly Gln Ser Arg Lys Phe Ile Ile Ala
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Asn Ala Arg Val Glu Asn Cys Ala Val Ile Tyr Cys Asn Asp Gly Phe
35 40 45

Cys Glu Leu Cys Gly Tyr Ser Arg Ala Glu Val Met Gln Arg Pro Cys
50 55 60

Thr Cys Asp Phe Leu His Gly Pro Arg Thr Gln Arg Arg Ala Ala Ala
65 70 75 80

Gln Ile Ala Gln Ala Leu Leu Gly Ala Glu Glu Arg Lys Val Glu Ile
85 90 95

Sequence Listing to File.TXT

Ala Phe Tyr Arg Lys Asp Gly Ser Cys Phe Leu Cys Leu Val Asp Val
100 105 110

Val Pro Val Lys Asn Glu Asp Gly Ala Val Ile Met Phe Ile Leu Asn
115 120 125

Phe Glu Val Val Met Glu Lys Asp Met Val Gly Ser Pro Ala His Asp
130 135 140

Thr Asn His Arg Gly Pro Pro Thr Ser Trp Leu Ala Pro Gly Arg Ala
145 150 155 160

Lys Thr Phe Arg Leu Lys Leu Pro Ala Leu Leu Ala Leu Thr Ala Arg
165 170 175

Glu Ser Ser Val Arg Ser Gly Gly Ala Gly Gly Ala Gly Ala Pro Gly
180 185 190

Ala Val Val Val Asp Val Asp Leu Thr Pro Ala Ala Pro Ser Ser Glu
195 200 205

Ser Leu Ala Leu Asp Glu Val Thr Ala Met Asp Asn His Val Ala Gly
210 215 220

Leu Gly Pro Ala Glu Glu Arg Arg Ala Leu Val Gly Pro Gly Ser Pro
225 230 235 240

Pro Arg Ser Ala Pro Gly Gln Leu Pro Ser Pro Arg Ala His Ser Leu
245 250 255

Asn Pro Asp Ala Ser Gly Ser Ser Cys Ser Leu Ala Arg Thr Arg Ser
260 265 270

Arg Glu Ser Cys Ala Ser Val Arg Arg Ala Ser Ser Ala Asp Asp Ile
275 280 285

Glu Ala Met Arg Ala Gly Val Leu Pro Pro Pro Pro Arg His Ala Ser
290 295 300

Thr Gly Ala Met His Pro Leu Arg Ser Gly Leu Leu Asn Ser Thr Ser
305 310 315 320

Asp Ser Asp Leu Val Arg Tyr Arg Thr Ile Ser Lys Ile Pro Gln Ile
325 330 335

Thr Leu Asn Phe Val Asp Leu Lys Gly Asp Pro Phe Leu Ala Ser Pro
340 345 350

Sequence Listing to File.TXT

Thr Ser Asp Arg Glu Ile Ile Ala Pro Lys Ile Lys Glu Arg Thr His
355 360 365

Asn Val Thr Glu Lys Val Thr Gln Val Leu Ser Leu Gly Ala Asp Val
370 375 380

Leu Pro Glu Tyr Lys Leu Gln Ala Pro Arg Ile His Arg Trp Thr Ile
385 390 395 400

Leu His Tyr Ser Pro Phe Lys Ala Val Trp Asp Trp Leu Ile Leu Leu
405 410 415

Leu Val Ile Tyr Thr Ala Val Phe Thr Pro Tyr Ser Ala Ala Phe Leu
420 425 430

Leu Lys Glu Thr Glu Glu Gly Pro Pro Ala Thr Glu Cys Gly Tyr Ala
435 440 445

Cys Gln Pro Leu Ala Val Val Asp Leu Ile Val Asp Ile Met Phe Ile
450 455 460

Val Asp Ile Leu Ile Asn Phe Arg Thr Thr Tyr Val Asn Ala Asn Glu
465 470 475 480

Glu Val Val Ser His Pro Gly Arg Ile Ala Val His Tyr Phe Lys Gly
485 490 495

Trp Phe Leu Ile Asp Met Val Ala Ala Ile Pro Phe Asp Leu Leu Ile
500 505 510

Phe Gly Ser Gly Ser Glu Glu Leu Ile Gly Leu Leu Lys Thr Ala Arg
515 520 525

Leu Leu Arg Leu Val Arg Val Ala Arg Lys Leu Asp Arg Tyr Ser Glu
530 535 540

Tyr Gly Ala Ala Val Leu Phe Leu Leu Met Cys Thr Phe Ala Leu Ile
545 550 555 560

Ala His Trp Leu Ala Cys Ile Trp Tyr Ala Ile Gly Asn Met Glu Gln
565 570 575

Pro His Met Asp Ser Arg Ile Gly Trp Leu His Asn Leu Gly Asp Gln
580 585 590

Ile Gly Lys Pro Tyr Asn Ser Ser Gly Leu Gly Gly Pro Ser Ile Lys
Page 8

595

Sequence Listing to File.TXT

600

605

Asp Lys Tyr Val Thr Ala Leu Tyr Phe Thr Phe Ser Ser Leu Thr Ser
 610 615 620

Val Gly Phe Gly Asn Val Ser Pro Asn Thr Asn Ser Glu Lys Ile Phe
 625 630 635 640

Ser Ile Cys Val Met Leu Ile Gly Ser Leu Met Tyr Ala Ser Ile Phe
 645 650 655

Gly Asn Val Ser Ala Ile Ile Gln Arg Leu Tyr Ser Gly Thr Ala Arg
 660 665 670

Tyr His Thr Gln Met Leu Arg Val Arg Glu Phe Ile Arg Phe His Gln
 675 680 685

Ile Pro Asn Pro Leu Arg Gln Arg Leu Glu Glu Tyr Phe Gln His Ala
 690 695 700

Trp Ser Tyr Thr Asn Gly Ile Asp Met Asn Ala Val Leu Lys Gly Phe
 705 710 715 720

Pro Glu Cys Leu Gln Ala Asp Ile Cys Leu His Leu Asn Arg Ser Leu
 725 730 735

Leu Gln His Cys Lys Pro Phe Arg Gly Ala Thr Lys Gly Cys Leu Arg
 740 745 750

Ala Leu Ala Met Lys Phe Lys Thr Thr His Ala Pro Pro Gly Asp Thr
 755 760 765

Leu Val His Ala Gly Asp Leu Leu Thr Ala Leu Tyr Phe Ile Ser Arg
 770 775 780

Gly Ser Ile Glu Ile Leu Arg Gly Asp Val Val Val Ala Ile Leu Gly
 785 790 795 800

Lys Asn Asp Ile Phe Gly Glu Pro Leu Asn Leu Tyr Ala Arg Pro Gly
 805 810 815

Lys Ser Asn Gly Asp Val Arg Ala Leu Thr Tyr Cys Asp Leu His Lys
 820 825 830

Ile His Arg Asp Asp Leu Leu Glu Val Leu Asp Met Tyr Pro Glu Phe
 835 840 845

Sequence Listing to File.TXT

Ser Asp His Phe Trp Ser Ser Leu Glu Ile Thr Phe Asn Leu Arg Asp
850 855 860

Thr Asn Met Ile Pro Gly Ser Pro Gly Ser Thr Glu Leu Glu Gly Gly
865 870 875 880

Phe Ser Arg Gln Arg Lys Arg Lys Leu Ser Phe Arg Arg Arg Thr Asp
885 890 895

Lys Asp Thr Glu Gln Pro Gly Glu Val Ser Ala Leu Gly Pro Gly Arg
900 905 910

Ala Gly Ala Gly Pro Ser Ser Arg Gly Arg Pro Gly Gly Pro Trp Gly
915 920 925

Glu Ser Pro Ser Ser Gly Pro Ser Ser Pro Glu Ser Ser Glu Asp Glu
930 935 940

Gly Pro Gly Arg Ser Ser Ser Pro Leu Arg Leu Val Pro Phe Ser Ser
945 950 955 960

Pro Arg Pro Pro Gly Glu Pro Pro Gly Gly Glu Pro Leu Met Glu Asp
965 970 975

Cys Glu Lys Ser Ser Asp Thr Cys Asn Pro Leu Ser Gly Ala Phe Ser
980 985 990

Gly Val Ser Asn Ile Phe Ser Phe Trp Gly Asp Ser Arg Gly Arg Gln
995 1000 1005

Tyr Gln Glu Leu Pro Arg Cys Pro Ala Pro Thr Pro Ser Leu Leu
1010 1015 1020

Asn Ile Pro Leu Ser Ser Pro Gly Arg Arg Pro Arg Gly Asp Val
1025 1030 1035

Glu Ser Arg Leu Asp Ala Leu Gln Arg Gln Leu Asn Arg Leu Glu
1040 1045 1050

Thr Arg Leu Ser Ala Asp Met Ala Thr Val Leu Gln Leu Leu Gln
1055 1060 1065

Arg Gln Met Thr Leu Val Pro Pro Ala Tyr Ser Ala Val Thr Thr
1070 1075 1080

Pro Gly Pro Gly Pro Thr Ser Thr Ser Pro Leu Leu Pro Val Ser
1085 1090 1095

Sequence Listing to File.TXT

Pro Leu Pro Thr Leu Thr Leu Asp Ser Leu Ser Gln Val Ser Gln
1100 1105 1110

Phe Met Ala Cys Glu Glu Leu Pro Pro Gly Ala Pro Glu Leu Pro
1115 1120 1125

Gln Glu Gly Pro Thr Arg Arg Leu Ser Leu Pro Gly Gln Leu Gly
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1145 1150 1155

Ser

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21

<210> 5
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Sequence Listing to File.TXT

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Sequence Listing to File.TXT

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